SERVICE INFORMATION

AMC30
MIXER AMPLIFIER

CONTENTS:

OPERATION MANUAL

SCHEMATIC DIAGRAMS

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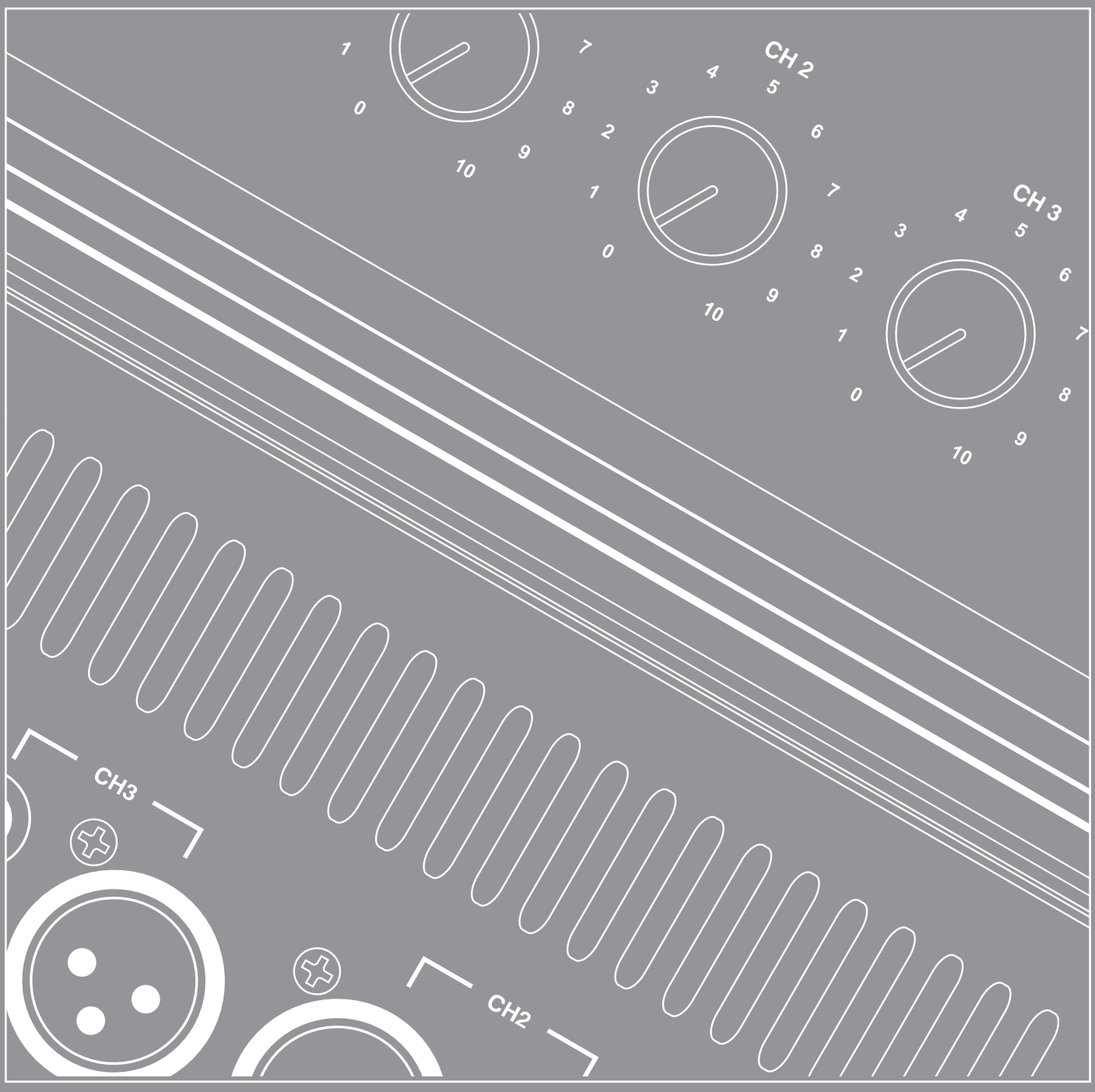
www.australianmonitor.com.au

Australian Monitor
INSTALLATION SERIES

AMC SERIES

30W/60W/120W/250W MIXER AMPLIFIERS
INSTALLATION AND OPERATION MANUAL



IMPORTANT SAFETY INFORMATION

1. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.

2. Read all documentation before operating your equipment. Retain all documentation for future reference.

3. Follow all instructions printed on unit chassis for proper operation.

4. Do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.

5. Make sure power outlets conform to the power requirements listed on the back of the unit.

6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

7. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.

8. Mains voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.

9. Have gain controls on amplifiers turned down during power-up to prevent speaker damage if there are high signal levels at the inputs.

10 Power down & disconnect units from mains voltage before making connections.

11. Never hold a power switch in the "ON" position if it won't stay there itself!

12. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.

13. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, weathersheet, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of foreign matter.

14. Do not remove the cover. Removing the cover will expose you to potentially dangerous voltages. There are no user serviceable parts inside.

15. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.

16. Do not connect the inputs / outputs of amplifiers or consoles to any other voltage source, such as a battery, mains source, or power supply, regardless of whether the amplifier or console is turned on or off.

17. Do not run the output of any amplifier channel back into another channel's input. Do not parallel- or series-connect an amplifier output with any other amplifier output. Australian Monitor Inc is not responsible for damage to loudspeakers for any reason.

18. Do not ground any red ("hot") terminal. Never connect a "hot" (red) output to ground or to another "hot" (red) output!

19. Non-use periods. The power cord of equipment should be unplugged from the outlet when left unused for a long period of time.

20. Service Information Equipment should be serviced by qualified service personnel when:

A. The power supply cord or the plug has been damaged.

B. Objects have fallen, or liquid has been spilled into the equipment

C. The equipment has been exposed to rain

D. The equipment does not appear to operate normally, or exhibits a marked change in performance

E. The equipment has been dropped, or the enclosure damaged.

INTRODUCTION AND CONTENTS

The Australian Monitor AMC series of amplifiers takes the heritage & reliability of our famous AMIS series amplifiers & integrates these features into low cost amplifiers for applications where reliability is everything, but the more elaborate features of our AMIS series are not required.

Available in 30, 60, 120 & 250 watt versions, the AMC series are 2 RU mixer amplifiers, featuring 70/100 volt line & 4 ohm outputs, & 3 universal mic/line inputs

Master volume & overall treble & bass controls are provided, along with Vox triggered muting (defeatable), giving channel 1 priority over inputs 2 & 3. There is also the facility to add a tone generator card.

The Australian Monitor AMC series gives the contractor a low cost alternative in applications that are price sensitive, but still require a high quality of sound reproduction & reliability.

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AUS, EUR, USA

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Rev B: 6th Jun 2006

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK),
NO USER SERVICEABLE PARTS INSIDE,
REFER SERVICING TO QUALIFIED SERVICE PERSONAL.

WARNING!

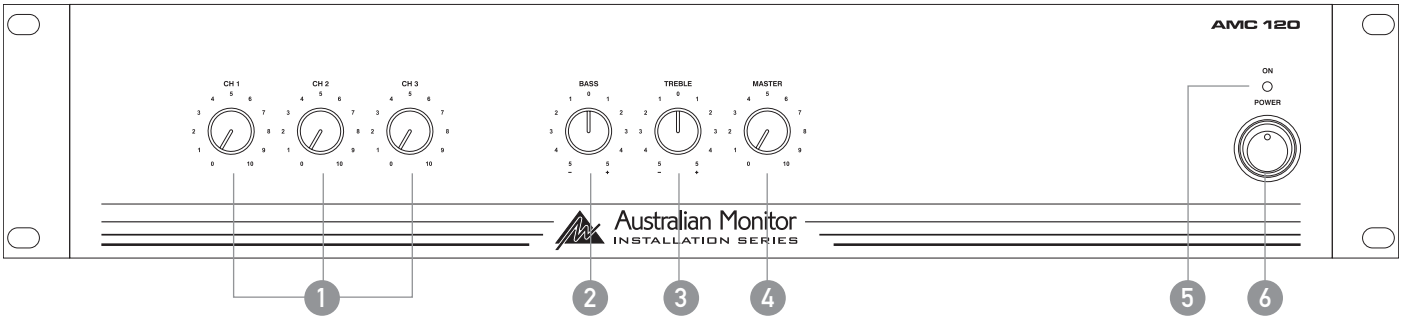
TO REDUCE THE RISK OF FIRE OR ELECTRIC HOCK
DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operational and maintenance (servicing) instructions in the literature accompanying the appliance.

Caution: To prevent electric shock do not use this (polarised) plug with an extension cord, receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure. To prevent electric shock, match wide blade of plug to wide slot, fully insert.

FRONT PANEL



1 CH 1-3

These control the levels for each channel input.

2 BASS

There is 12dB of cut and boost at 100Hz.

3 TREBLE

There is 9dB of cut and boost at 10kHz.

4 MASTER

This controls the overall mixed output level.

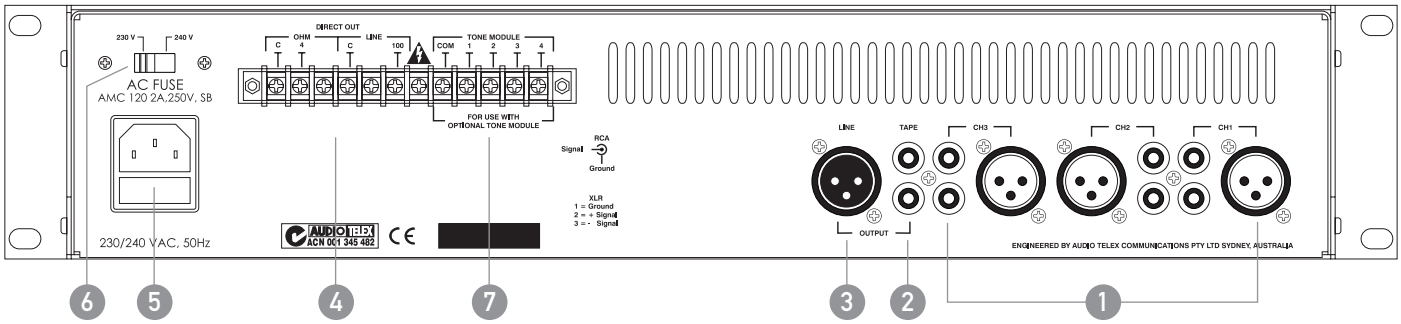
5 ON

This LED indicates the unit is powered “on”.

6 POWER

This switch switches power on or off the mains. The up position is on.

REAR PANEL



1 CH 1-3

Each channel input section has two inputs: XLR input - This is a balanced microphone input. It has an input sensitivity of 1mV. RCA input - This is an unbalanced line level input. It has an input sensitivity of 500mV. The two RCA sockets are summed to mono internally.

2 TAPE OUTPUT

The TAPE output is on unbalanced RCA connectors. The output level is 150mV into 10kohm at rated output. The output is dual mono.
The TAPE output is not affected by the MASTER volume control or the BASS and TREBLE controls. The TAPE output does not receive the tone signal if the optional tone generator module is installed.

3 LINE OUTPUT

The LINE output is on a balanced XLR connector. The output level is 1V into 1k at rated output.

NOTE: When wiring the LINE output as unbalanced, Pin2 should be wired as hot and Pin1 should be wired as ground/ shield. Do not wire Pin3.

4 DIRECT OUT

The speaker connections are on the 12 pole terminal strip. There is a low impedance output (OHM) and a distributed line voltage output (LINE). 70V out is available on 115V models. 100V out is available on 230V/240V models.

MINIMUM IMPEDANCE

	AMC30	AMC60	AMC120	AMC250
Distributed Line Output				
70V (115V version)	166ohm	83ohm	41ohm	20ohm
100V (230/240V version)	333ohm	166ohm	83ohm	40ohm
Low Impedance Output				
(both versions)	4ohm	4ohm	4ohm	4ohm

NOTE: Only connect one output - either Distributed Line or Low Impedance per channel. Do LowZ and 70/100V at the same time

The output strip comes fitted with a touch-proof cover held in place by two M3 machine screws with flat and spring washers..

5 IEC MAINS INPUT SOCKET

This is a standard IEC 3 pin socket. It accepts a standard IEC mains cable, provided. The fuse draw at 5 contains the mains fuse and a spare. The mains fuse is a time lag (slow blow)
HRC 20mm x 5mm ceramic type fuse.
The ratings are:

	AMC30	AMC60	AMC120	AMC250
230V/240V model	0.5A	1.6A	2A	3.15A
115V model	1A	3.15A	4A	6.3A

Always replace the fuse with one of the same value and type.

NOTE: Always disconnect power to the amplifier before replacing fuses.

6 VOLTAGE SELECT SWITCH

(only on 230V/240V models) This switch is used to select the mains voltage for your region.

Always replace the fuse with one of the same value and type.

7 (OPTIONAL) TONE MODULE

These terminals are for use with an optional tone module (not supplied).

INSTALLATION

MOUNTING

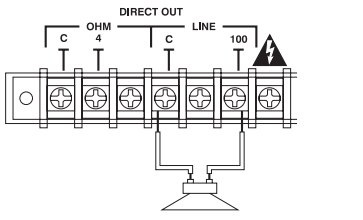
When rack mounting, it is advisable to allow 1 rack space above and below the amplifier. When multiple amplifiers are mounted in a rack, exhaust fans should be used on the rack. Airflow for cooling the AMC30, AMC60 & AMC120 is by convection from bottom to top. Airflow for cooling the AMC250 is by fan from front to back.

OUTPUT CONNECTIONS

DIRECT OUTPUT

The output terminal strip accepts wire sizes from 16-22AWG (1.5mm2 – 0.35mm2) or spade lugs.
The following table should be used as a guideline for cable sizes. Regulations in your area may require different gauged wire and should be checked before using.

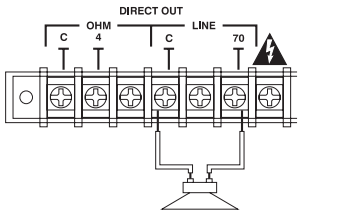
OUTPUT	DISTANCE	WIRE SIZE			
		AMC30	AMC60	AMC120	AMC250
100V	Up to 50m	AWG26(0.12mm2)	AWG26(0.12mm2)	AWG24(0.2mm2)	AWG22(0.35mm2)
	50m–200m	AWG24(0.2mm2)	AWG20(0.5mm2)	AWG18(0.75mm2)	AWG16(1.5mm2)
	Over 200m	AWG20(0.5mm2)	AWG18(0.75mm2)	AWG16(1.5mm2)	AWG13(2.5mm2)
70V	Up to 50m	AWG26(0.12mm2)	AWG24(0.2mm2)	AWG22(0.35mm2)	AWG18(0.75mm2)
	50m–200m	AWG20(0.5mm2)	AWG18(0.75mm2)	AWG16(1.5mm2)	AWG13(2.5mm2)
	Over 200m	AWG18(0.75mm2)	AWG16(1.5mm2)	AWG13(2.5mm2)	AWG10(6.0mm2)
4 ohm	Up to 10m	AWG18(0.75mm2)	AWG18(0.75mm2)	AWG18(0.75mm2)	AWG18(0.75mm2)
	10m–30m	AWG13(2.5mm2)	AWG13(2.5mm2)	AWG13(2.5mm2)	AWG13(0.35mm2)
	Over 30m	Not Recommended	Not Recommended	Not Recommended	Not Recommended



230/240V version

minimum total speaker impedance

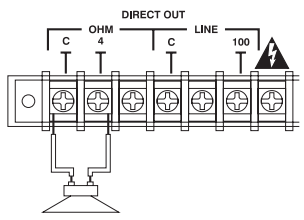
AMC30	AMC60	AMC120	AMC250
333ohm	**166ohm**	**83ohm**	**40ohm**



115V version

minimum total speaker impedance

AMC30	AMC60	AMC120	AMC250
166ohm	**83ohm**	**41ohm**	**20ohm**



Both versions

minimum total speaker impedance
All models
4 ohm

NOTE: Only connect one output - either Distributed Line or Low Impedance.

LINE OUTPUT

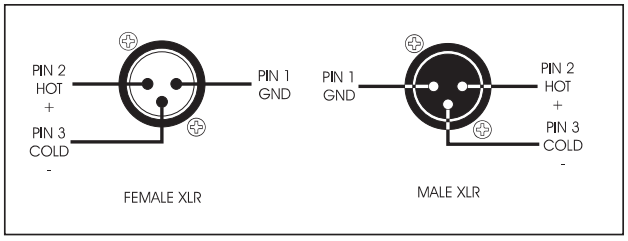
he LINE output XLR can be used to connect up to 6 booster amplifiers. Balanced wiring (shielded pair cable) is recommended.

NOTE: When wiring the LINE output as unbalanced, Pin2 should be wired as hot and Pin1 should be wired as ground/shield. Do not wire Pin3.

TAPE OUTPUT

The TAPE output wiring should be kept as short as possible.

INPUT CONNECTIONS

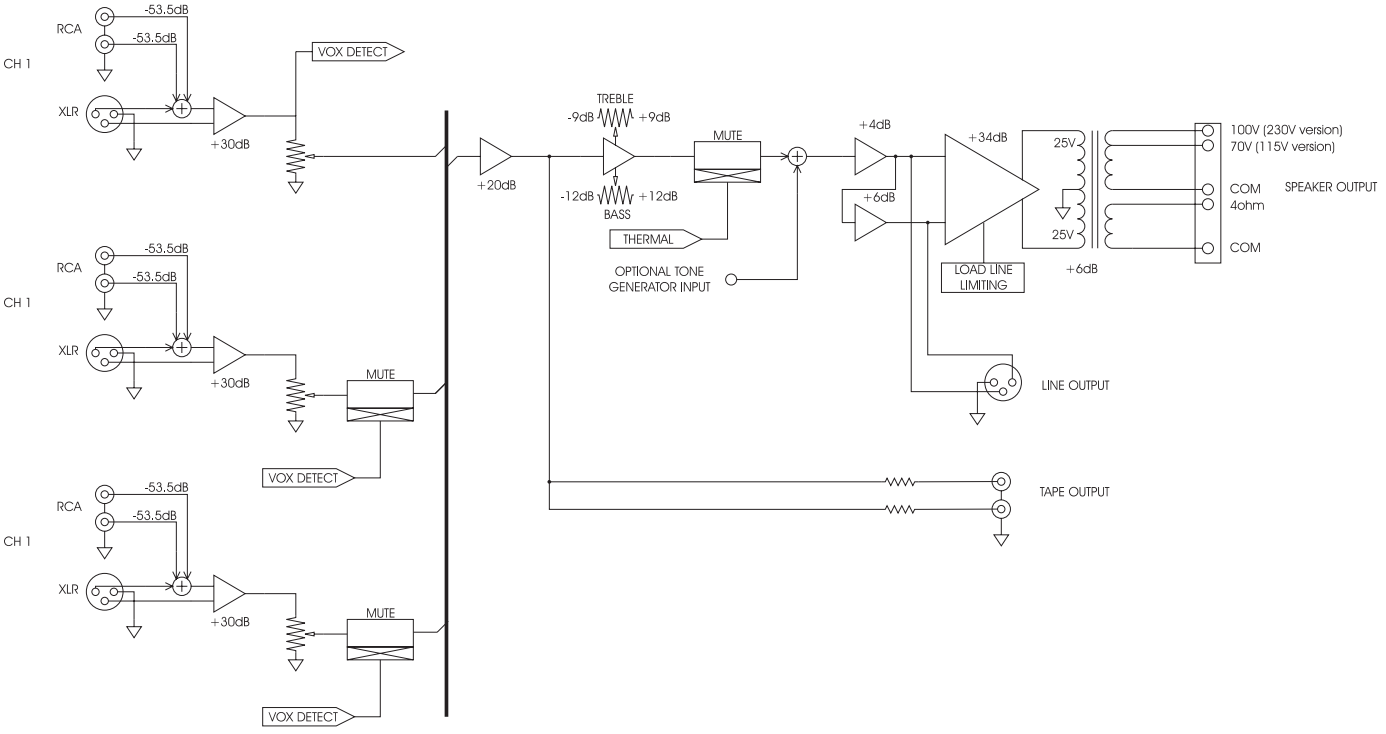


For wiring balanced in, pin 2 is hot. Unbalanced wiring on the microphone inputs is not recommended. Balanced input wiring (shielded pair cable) is recommended. Unbalanced RCA wiring should be keep as short as possible.

TROUBLESHOOTING & BLOCK DIAGRAM

TROUBLESHOOTING GUIDE

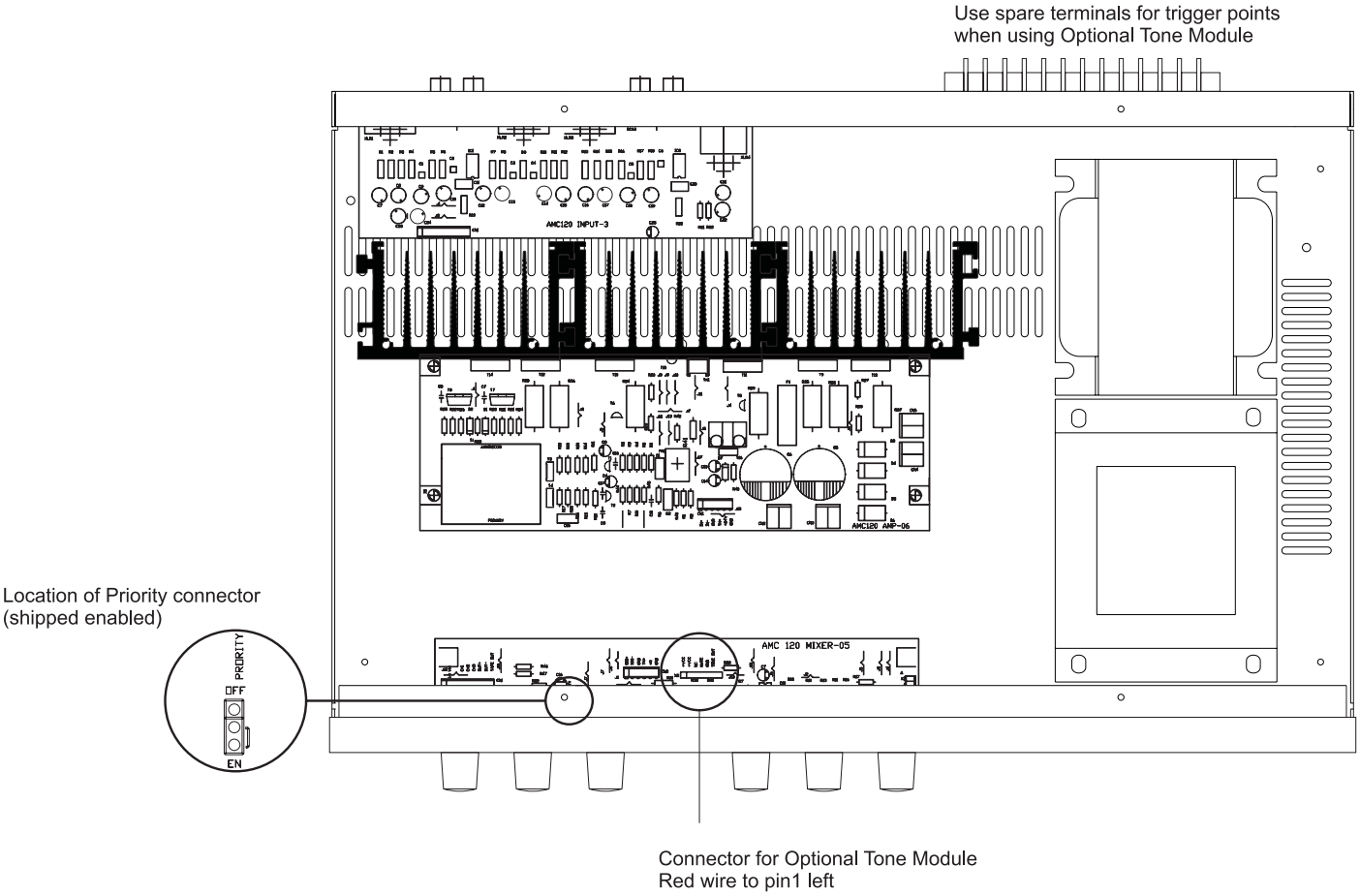
TROUBLE	LIKELY CAUSE	REMEDY
Power LED not on	Power not reaching amplifier Check mains connection Check mains fuse	Check power switch is on
Distorted sound	Output is short circuit	Check speaker loads for shorts
	Input is overloaded	Reduce input level at source
	Output is being over driven	Reduce volume levels on front panel
	Bass control is turned up	Reduce Bass control level
No sound but amp is on	Volume controls down	Check volume controls
	Amplifier has overheated (AMC60, AMC120 AMC250 only)	Check for obstructions above and below Make sure the amplifier is well ventilated.
	DC fuse(s) blown	Refer product to local Australian Monitor dealer
No sound from channels 2 & 3	Priority function is being used	Remove signal (disconnect input) from channel 1 OR Disable priority function (see Internal Adjustments)
Condenser microphone does not work	Amplifier does not have phantom power	Purchase an external power supply OR Upgrade to the AMIS range of amplifiers
Tones do not sound when triggered	Tone generator module not installed.	Purchase optional Tone generator module



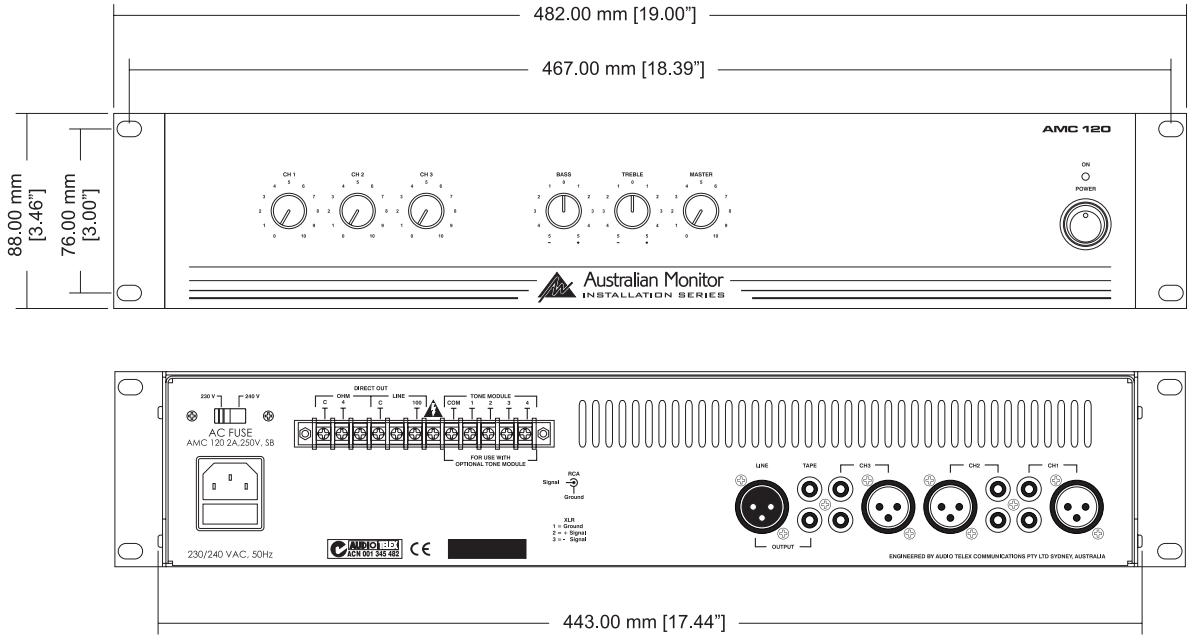
FUNCTIONAL NOTES & INTERNAL ADJUSTMENTS

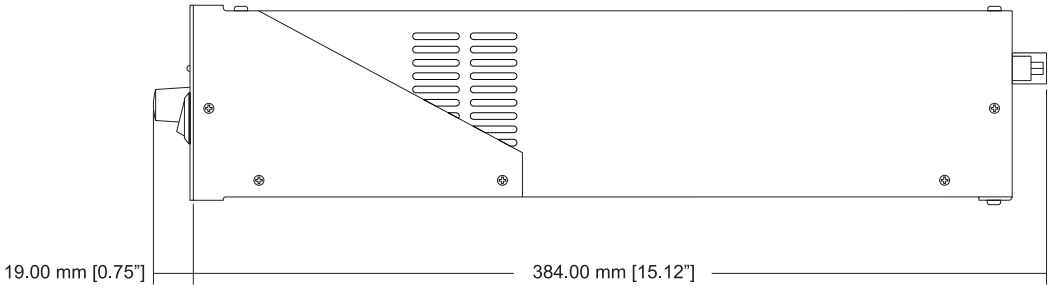
PRIORITY

Channel 1 will mute channels 2 and 3. This will only occur when signal appears on channel 1, irrespective of the channel volume control.
Priority can be disabled. (See below).
The release time is approx. 3 secs and is NOT adjustable.
The mute depth is approx. 40dB and is not adjustable.

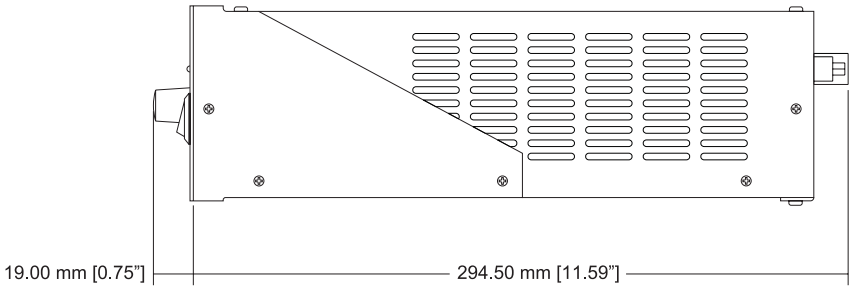


DIMENSIONS

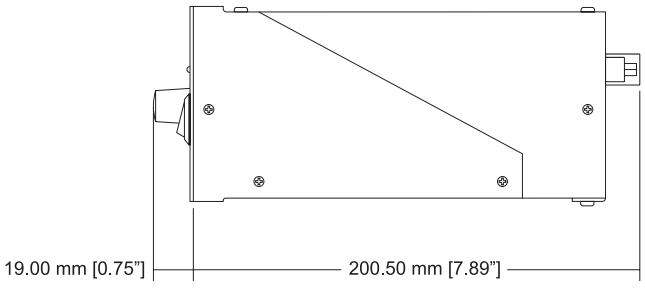




AMC250



AMC60/120



AMC30

SPECIFICATIONS

		AMC 30	AMC 60	AMC 120	AMC 250
POWER OUTPUT (0.5%THD, 1KHZ)		30W	60W	120W	250W
S/N RATIO		> 75dBr	> 75dBr	> 80dBr	>85dBr
POWER BANDWIDTH (-3DB +1DB)		85Hz-15kHz	75Hz-15kHz	75Hz-15kHz	30Hz-20kHz
FUSES	MAINS (115V)	1.0A	3.15A	4A	6.3A
	MAINS (230/240V)	0.5A	1.6A	2A	3.15A
	DC	1.6A (x2)	4A	8A	10A (x2)
OUTPUT REGULATION		96%	93%	93%	90%
SIZE (WXHXD)		482x88x190mm 19"x3.5"x7.5"	482x88x281mm 19"x3.5"x11.1"	482x88x281mm 19"x3.5"x11.1"	482x88x384mm 19"x3.5"15.1"
NET WEIGHT		6.0kg 13.2lb	8.5kg 18.7lb	10.5kg 23.1lb	11.5kg 25.3lb
SHIPPING WEIGHT		7.5kg 16.5lb	10.5kg 23.1lb	12.5kg 27.6lb	14kg 30.8lb
SHIPPING DIMENSIONS (WXHXD)		510x145x297mm 20.1"x5.7"x11.7"	525x175x385mm 20.7"x6.9"x15.2"	525x175x385mm 20.7"x6.9"x15.2"	525x185x470mm 20.7"x7.3"x18.5"
MAINS CURRENT DRAW (240V)					
	FULL POWER	0.35A	0.66A	1.20A	2.53A
	1/3 POWER	0.23A	0.44A	0.80A	1.61A
	1/8 POWER	0.17A	0.32A	0.55A	1.10A
	IDLE	0.08A	0.13A	0.15A	0.15A
MAINS CURRENT DRAW (115V)					
	FULL POWER	0.73A	1.38A	2.50A	5.28A
	1/3 POWER	0.48A	0.92A	1.67A	3.36A
	1/8 POWER	0.35A	0.67A	1.15A	2.30A
	IDLE	0.17A	0.27A	0.31A	0.31A

SPECIFICATIONS

		AMC 30	AMC 60	AMC 120	AMC 250
THERMAL OUTPUT (W)					
	FULL POWER	38W	67W	128W	259W
	1/3 POWER	33W	63W	118W	231W
	1/8 POWER	26W	51W	91W	168W
	IDLE	11W	19W	26W	26W
THERMAL OUTPUT (BTU/HR)					
	FULL POWER	130	229	437	884
	1/3 POWER	113	215	403	788
	1/8 POWER	90	172	311	573
	IDLE	38	65	89	89

**1/3 and 1/8 power levels relate to voltage changes, not load changes.*

COMMON TO ALL MODELS		
THD (1KHZ, -1DB)		better than 0.5%
MIC INPUT	SENSITIVITY	1mV @ 200ohm
	IMPEDANCE	1k3 ohm
	HEADROOM	77mV (37dB)
AUX INPUT	SENSITIVITY	0.5V+/@100kohm
	IMPEDANCE	>200kohm
	HEADROOM	> 15V (>30dB)
TONE CONTROL BASS @ 100HZ		+/- 12 dB
	TREBLE @ 10KHZ	+/- 9 dB
LINE OUT	NOMINAL OUTPUT	1V @ 1kohm
	OUTPUT IMPEDANCE	100ohm
TAPE OUT	NOMINAL OUTPUT	300mV @ 10kohm
OUTPUT	IMPEDANCE	10kohm

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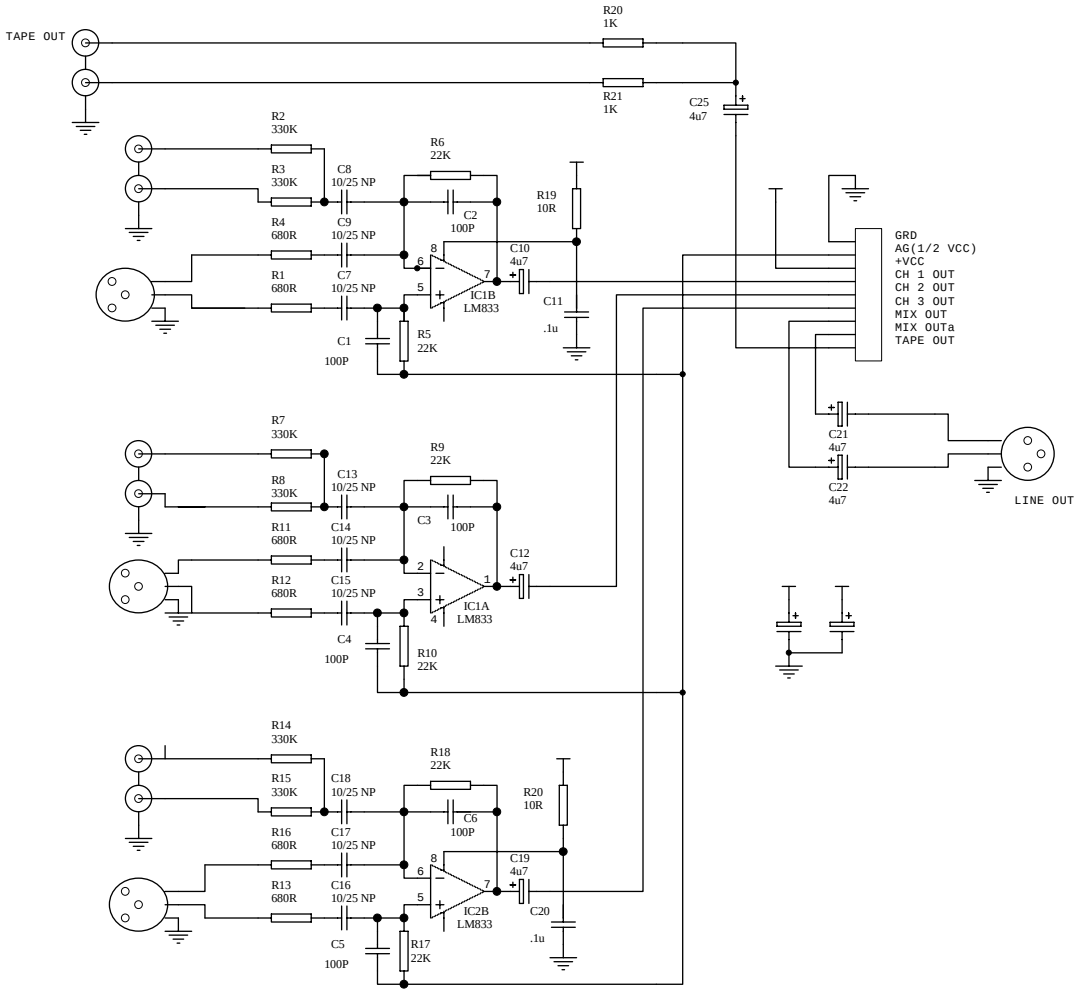
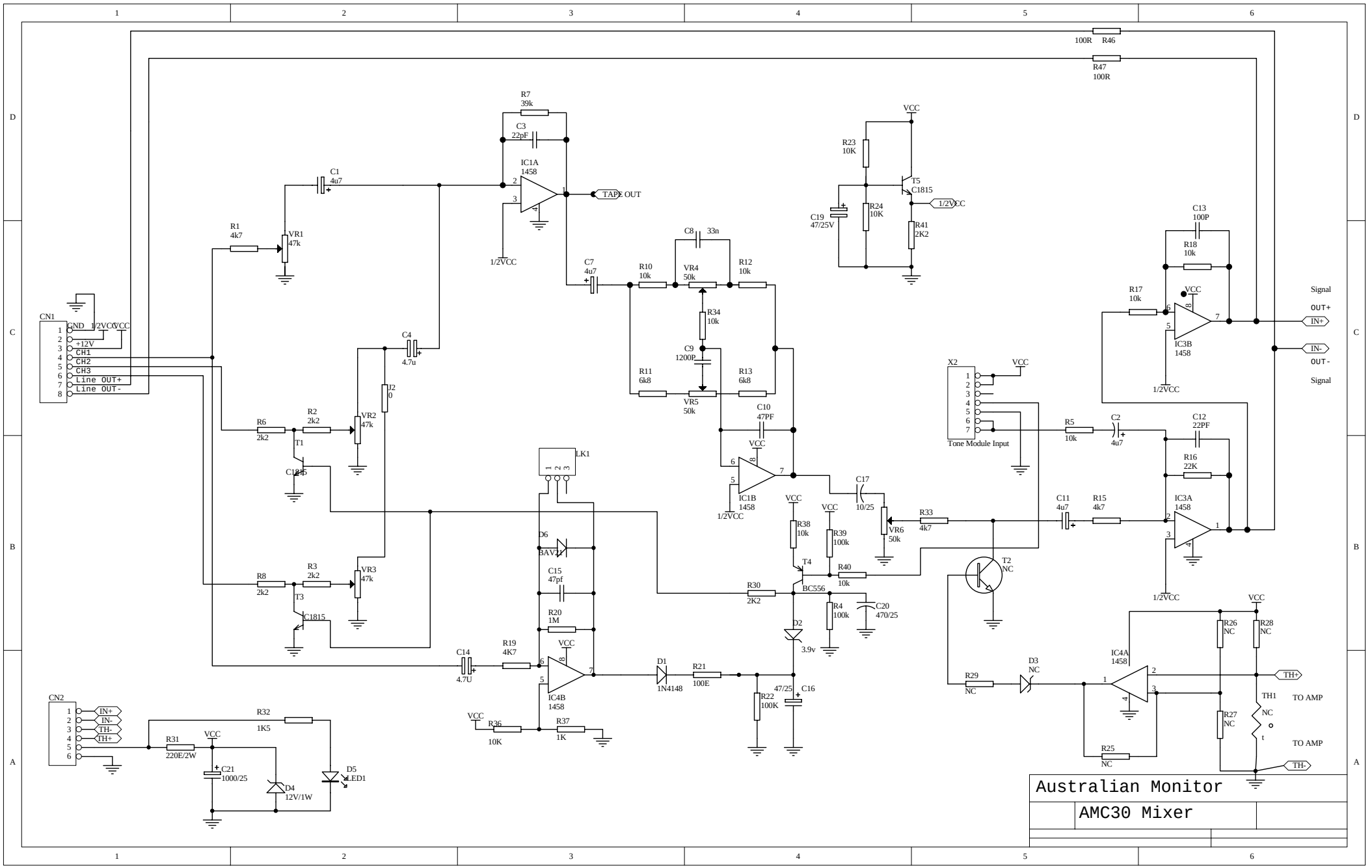
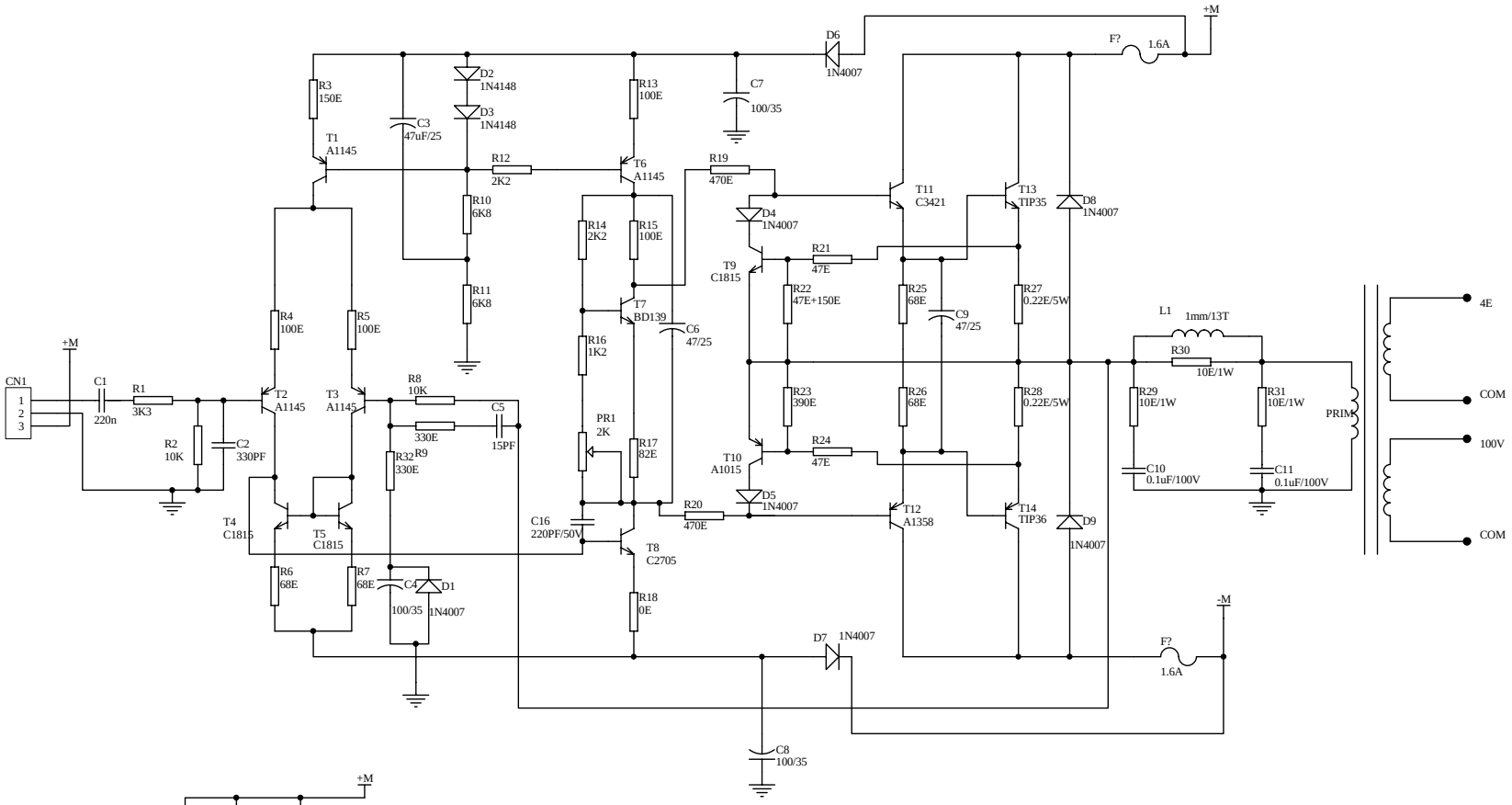
XLR-FEMALE 1

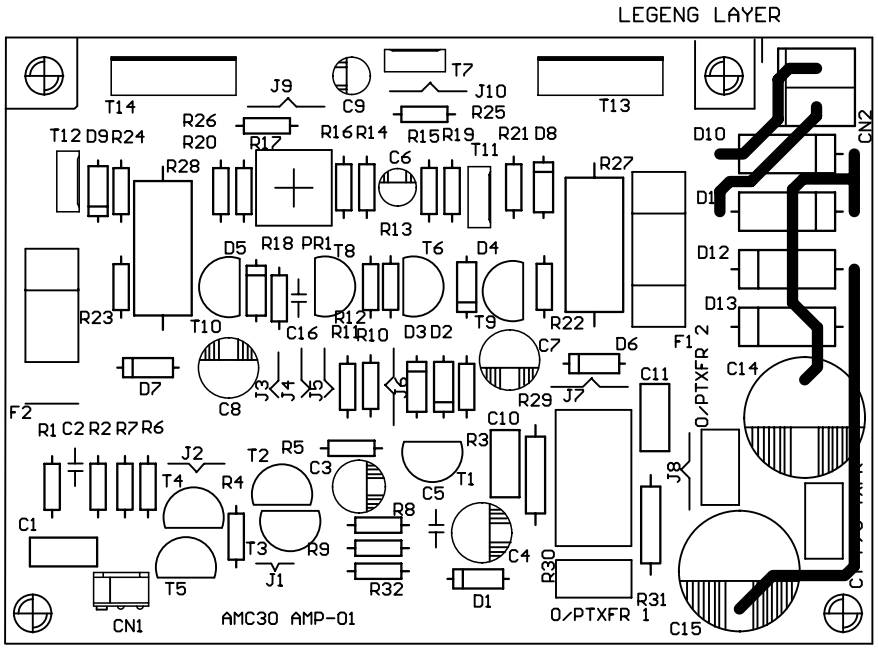


Australian Monitor		
	AMC30 Mic Input	C


Australian Monitor
AMC30 Mixer
CN1
GND
1/2VCC
VCC
+12V
CH1
CH2
CH3
Line OUT+
Line OUT-
CN2
IN+
IN-
TH-
TH+
R1 4k7
VR1 47k
C1 4u7
R2 2k2
VR2 47k
R3 2k2
VR3 47k
R6 2k2
R8 2k2
T1
T3
C1815
C4 4.7u
J2 0
R7 39k
C3 22pF
IC1A 1458
TAPE OUT
1/2VCC
C7 4u7
R10 10k
VR4 50k
R12 10k
C8 33n
R34 10k
C9 1200P
R11 6k8
R13 6k8
VR5 50k
C10 47PF
IC1B 1458
C17 10/25
VR6 50k
R33 4k7
R38 10k
R39 100k
T4
BC556
R40 10k
R30 2K2
C15 47pf
R20 1M
R19 4K7
C14 4.7U
IC4B 1458
D6 BAV21
D2 3.9v
D1 1N4148
R21 100E
R22 100K
C16 47/25
R36 10K
R37 1K
R32 1K5
R31 220E/2W
C21 1000/25
D4 12V/1W
D5 LED1
LK1
R23 10K
R24 10K
T5 C1815
C19 47/25V
R41 2K2
R46 100R
R47 100R
X2
Tone Module Input
R5 10k
C2 4u7
C11 4u7
R15 4k7
C13 100P
R18 10k
R17 10k
IC3B 1458
C12 22PF
R16 22K
IC3A 1458
T2 NC
R29 NC
D3 NC
IC4A 1458
R26 NC
R28 NC
R27 NC
R25 NC
TH1 NC
TO AMP
TO AMP
Signal
OUT+
IN+
IN-
OUT-
Signal



Australian Monitor	
	AMC30 Amplifier


LEGENG LAYER
T14
J9
C9
T7
J10
T13
R26
R20
R17
R16
R14
R15
R19
R25
R21
D8
T12
D9
R24
T11
C6
R28
R27
D10
CN2
D11
R13
D5
R18
PR1
T8
T6
D4
D12
D13
R23
T10
C16
R12
R11
R10
D3
D2
T9
R22
F1
C7
D6
C14
D7
C8
J3
J4
J5
J6
R29
J7
C11
F2
O/PTXFR 2
R1
C2
R2
R7
R6
C10
R3
J2
R5
T2
C3
T4
R4
C5
T1
J8
C1
R8
T3
R9
C4
R30
J1
T5
R32
D1
R31
CN1
AMC30 AMP-01
O/PTXFR 1
C15